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| EXAMINER |
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LUONG, ALAN H

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| ART UNIT | PAPER NUMBER |
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2609

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09/21/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

Office Action Summary

Application No.

10/821,476

Applicant(s)

ALSOBROOK ET AL.

Examiner

ALAN LUONG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 09 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: " 11" is present QAM downstream mod in Fig. 2 but not in the disclosure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: a) at page 2 line 15 and line 16 of specification; "120" is believed to be intended as "210" and "145" is believed to be intended as "215"; so these numbers should be corrected as such. Appropriate correction is required.

Claim Objections

1. Claim 10 is objected to because of the following informalities: at line 9 of claim 10; "DCT" is believed to be intended as "DHCT" and the spelling should be corrected as such. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **1-3,7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No.7,190,901 (US'901) issued to Farmer et al. in view of Pub. No. US 2002/0147978 (US'978) issued to Dolgonos et al.

Regarding to claim 1: The US'901 discloses a fiber-to-the-home (FTTH) system having a forward path (col.2 lines 41-47), comprising:

a receiving device (as "the analog optical receiver") including a QAM modulator for receiving IP signals, wherein the IP signals comprise video, audio (as " modulated RF signals ") and data signals(as " video control signals") see col.17, lines 6-17) .

the QAM modulator for receiving and modulating IP video and audio signals to provide RF video and audio signals (as " modulated RF signals" in col. 17 lines 6-10) ;
and

at least one digital home communications terminal (DHCT). ("The video services terminal... " in col.17 lines 6-13) for receiving the RF video signals. ("The video service terminal can be coupled to a tuner that comprises a TV set or radio." (col.17 lines 13-14).

But the US'901 fails to disclose a receiving device including a QAM modulator for receiving and modulating the IP signals in the downstream path.

Dolgonos discloses a device including QAM modulator (as "the CMTS includes a 64/256 QAM modulator " see US'978, para.[0022] lines 11-13 and Fig. 3 block 26) for receiving IP signals ("for receiving the downstream IP signals from the wired cable TV plant "...US'978 para.[0007] lines 14-18) and (" For downstream traffic, the cable plant interface receives a DOCSIS compliant stream from the cable plant and outputs a TCP/IP..." US'978, para.[0026] lines 10-16 and Fig. 4 block 32), wherein the IP signals comprise video, audio, and data signals (".. the downstream data channel

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output from the CMTS with video, audio, PPV..", US'978 para.[0023] lines1-4);

Also, Dolgonos discloses the QAM modulator for receiving and modulating IP video and audio signals to provide RF video and audio signals ("modulating user data onto a 6MHz downstream data channel" US'978 para.[0022] lines11-13) and (".. the signal addressed to the group of subscribers are 64 or 256 QAM modulated into a 6MHz downstream data channel at CMTS, merged with other downstream channels (such as CATV video channels) at the hub... to all subscriber homes." US'978 para.[0035] lines 15-20). Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify QAM modulator in a receiver device to receive IP signals in forward signals taught by Dolgonos in the FTTH system of Farmer; in order to combine IP signals in downstream path.

Regarding to claim 2: Farmer also discloses the FTTH system of claim 1, wherein the receiving device further comprises a switch (" The data service hub can further comprise a telephone switch" please see US'901 col.11 lines 1-7) and for providing the IP video and audio signals (" The logic interface can comprise a Voice over Internet Protocol (VoIP)...The logic interface can also translate interfaces with the telephone switch... send the packets of information" col.11 lines 17-37) and for providing IP data signals to a computer via a computer address. (The data handled by the processor can comprise one or more of telephony and data services such as an Internet service...other like interfaces." US'901 col.17 lines 42-54). But Farmer fails to disclose providing the IP video and audio signals to the QAM modulator via a QAM modulator address.

Dolgonos teaches ("The controller includes a CPU...output of QAM modulator into a TCP/IP output signal that is 10/100 Base-T Ethernet compliant...exchange information with the hub." US'978 para.[0027] lines 12-20 and Fig. 5). Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the QAM modulator in the device to receive IP video and audio signals via a QAM modulator address in the FTTH system in order to forward IP video and audio signals in downstream path.

Regarding to claim 3: Farmer discloses the FTTH system of claim 1, further comprising an optical network terminal located in close proximity to the at least one DHCT ("The digital optical receiver 540 and digital optical transmitter 530 are connected to a processor 550 that selects data intended for the instant subscriber optical interface 140 based upon an embedded address" US'901 col.17 lines39-42) for providing the IP video and audio signals to the receiving device and for providing IP telephone signals to a coupled telephone. ("The data handled by the processor 550 can comprise one or more of telephony and data services such as an Internet service. The processor 550 is connected to a telephone input/output 560 that can comprise an analog interface. The processor 550 is also connected to a data interface 555 that can provide a link to computer devices, ISDN phones, and other like devices..." col.17 lines 42-54).

Regarding to claim 7: Farmer teaches a method for transmitting and receiving RF modulated digital and analog signals in a fiber-to-the-home (FTTH) network, the FTTH network including a forward path and a reverse path, the method comprising the steps of:

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receiving the forward RF signals at an optical network terminal (" the analog optical receiver receives the downstream optical video signals and convert into modulated RF TV signals..."US'901'col.17 lines 6-13);

providing the video and audio signals to a switch included in a single wire return device (SWRD) (RF packet can be formatted as Ethernet packets. RF packets are transferred upstream from the data conditioner when a switch connects the data conditioner to digital optical transmitter. The switch is controlled by processor... a computer or telephone", US'901 col.18 line 60 to col.19 line 6),

modulating the video and audio signals to provide modulated video and audio signals for viewing on conventional DHCTs.(“ modulated RF TV signals and downstream video service control signals... for digital TV application”, see US'901 col.17 lines 7-17)

However Farmer fails to disclose wherein the switch receives IP signals from ONT into the SWRD.

Dolgonos teaches the method comprising the steps of:

receiving the IP signals ("for receiving the downstream IP signals from the wired cable TV plant ..." see US'978 para.[0007] lines 14-18) at an optical network terminal (.."receiving a DOCSIS compliant stream from the cable plant- as Optical Network Terminal- and outputs a TCP/IP- as IP signals-...by the cable plant interface", see para.[0026] lines10-14);

providing the IP video and audio signals to receiver device wherein "...The CMTS 26 is essentially a data switching system designed to, on the downstream

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side, receive data from the Internet, via the headend 200, and provide the data switching necessary to route data over a downstream data channel to a group of subscribers in the service area served by the hub 12", see US'978 para.[0022] lines6-11)

modulating the IP video and audio signals ("...the signals addressed to the group of subscribers are 64 QAM or 256 QAM modulated into a 6 MHz downstream data channel at CMTS 26, merged with other downstream channels (such as CATV video channels) at the hub transmitter and receiver 28, and broadcast over the HFC cable plant 14 to all subscriber homes" see para.[0035] lines15-20). Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to add QAM modulator in receive device wherein receiving IP signals from Optical Network Terminal as taught by Dolgonos in bi-directional FTTH system of Farmer, in order to forward IP signals in RF video forward signal to DHCTs.

Regarding to claim 8: Farmer and Dolgonos teach the method of claim 7, further comprising the step of providing the IP data signals to the switch (US'901col18 lines 45-52 and col.18 line 60 to col.19 line 6), wherein the switch provides the IP data signals to a coupled computer.(col.17 lines 32-54).

4. Claims **4-6 and 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **US Patent No.7,190,901 (US'901)** issued to **Farmer et al.** and **Pub. No. US 2002/0147978 (US'978)** issued to **Dolgonos et al.** in view of **US Patent No.5,481,542 (US'542)** issued to **Logston et al.**

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Regarding to claim 4: Farmer and Dolgonos teach the (FTTH) system as claim 1 above, further comprises a reverse path, comprising:

at least one digital home communications terminal (DHCT) for transmitting reverse RF signals ("...set top terminals may employ RF carriers to transmit upstream information" . See US'901 col.3, lines 9-11)

the receiving device (" a portion of the return path may be housed in a subscriber optical interface" see US'901 col. 3, lines 12-14) for receiving the reverse RF signals (col. 17 line 66 to col.18, line 8), demodulating the reverse RF signals (col.18, lines 9-40), and converting the demodulated signals to Ethernet signals("...the RF packets can be formatted as Ethernet packets." col. 18; lines 41-52)

an optical network terminal (ONT) coupled to the SWRD for converting the Ethernet signals to optical signals (".. a digital optical transmitter that converts upstream data packet and RF packet electrical signals into the optical domain." See US'901 col.17, lines28-31), and for transmitting the optical signals to a headend facility via optical fiber ("...the optical signals can be transmitted back to the data service hub"; see col.16, lines 53-57); and

a downstream modulator located in the headend facility ("The data service hub can comprise one or more modulators..." US'901 col.10, lines 6-8 and Fig. 3) for receiving the optical signals ("Upstream optical received from ... can convert the upstream optical signals into the electrical domain." col. 11, lines 59-65) and for sending the forward signals (col.10, lines 15-24), However, Farmer fails to teach the reverse RF

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signals including header information and payload data and the downstream modulator having an identification number that is inserted into the forward signals.

Logston teaches the downstream modulator having an identification number that is inserted into the forward signals (US'542 col.19, lines 46-61). Also, Logston discloses the reverse RF signals including header information and payload data. (" a message cell format...has a 40 bit message cell header and a 384 bit message payload area." US'542; col.14 lines38-46 and Fig.5A, 5B and 5C). Logston further discloses wherein the at least one DHCT inserts the received modulator identification number in the reverse header information, and wherein the SWRD converts the modulator identification number into an Internet Protocol address indicative of the modulator identification number. (US'542 col.19, lines 18-62 and Fig. 5). Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to couple the the downstream modulator having an identification number that is inserted into the forward signals, and modifying the header information and payload data as taught by Logston, in order to couple the header information and payload data into the reversed RF signals in the DHCT wherein the SWRD converts the modulator identification number into an Internet Protocol address indicative of the modulator identification number .

Regarding to claim 5: In the Farmer's FTTH system, the receiving device further comprising:

an upstream demodulator coupled to the diplex filter for demodulating the reverse RF signals;(US'901 col. 4, lines 5-25)

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a microprocessor for converting the demodulated signals to Ethernet signals (US'901 col. 17, lines 42-65 and Fig. 7 block 550); and

a switch for receiving the Ethernet signals and any additional signals from a second source, the switch for combining the signals and for providing a combined signal to the ONT.(US'901 col. 3, lines 34-40 and col. 18 line 63 to col.19, line 2 and Fig. 7 block 513).

Regarding to claim 6: Farmer discloses the FTTH system of claim 5, wherein the SWRD converts the identification number into the Internet Protocol number via the microprocessor. (US'901 col.17, lines 39-54)

Regarding to claim 9: In the method of Farmer and Dolgonos in claim 7, further comprising the steps of:

generating a reverse RF modulated signal including header information in a digital communications terminal (DHCT); (US'901 col.22 line 66 to col. 23 line4 and Fig. 12 step 1220)

providing the reverse RF modulated signal via coaxial cable to a single wire return device (SWRD); (US'901 col.24, lines 47-57 and Fig.13)

demodulating the reverse RF modulated signal to provide a reverse demodulated signal; (US'901 col.23, line 47 to col.24 line 25 and Fig.13)

processing the reverse demodulated signal to provide a reverse Ethernet signal; (US'901 col.18 lines 41-52 and col. 19 lines 41-43, Fig. 7 block 407)

converting the reverse Ethernet signal to a reverse optical signal in an optical

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network terminal (ONT) (US'901 col.23, lines 14-18, and Fig.12 step 1230, 1235); and receiving the reverse optical signal at a downstream modulator located in a headend facility,(US'901 col. 23, lines 16-46 and Fig. 12 steps1240, 1245, 1250, and 1260)

However, Farmer and Dolgonos fail to disclose wherein the downstream modulator transmits a forward IP signal in response to the received reverse optical signal.

Logston discloses wherein the downstream modulator transmits a forward signal in response to the received reverse optical signal (as " the forward signaling path between the service provider (SP) and Set Top Terminal (STT) is provided via CMC on Ethernet to QPSK modulator...The forward path electrical signal output by QPSK modulator is provided to RF combiner along with the 64 QAM video signals..." please see US'542 col.8 lines 27-44 and Fig. 2 blocks 108, 112, 124 and 128). Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify at the headend wherein the downstream modulator transmits a forward IP signal in response to the received reverse optical signal and insert the received identification number into reverse header information prior to transmit to the SWRD, wherein the SWRD convert the identification number into IP address taught by Logston as taught in the FTTH system of Farmer and Dolgonos; in order to communicate DHCT to headend through IP network.

Regarding to claim 10: Logston also discloses the FTTH system of claim 9 wherein the downstream modulator includes an identification number that is inserted

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into signals transmitted in the forward path and stored in the DHCT, and wherein the DHCT inserts the received identification number into the reverse header information prior to transmitting to the SWRD. (US'542 col.19 lines 22-61 and Fig. 5A, 5B and 5C)

Regarding to claim 11:Logston further discloses the FTTH system of claim 10, wherein the SWRD converts the identification number into an Internet Protocol address that is indicative of the identification number. (col.19 lines 44-61 and Fig. 5A-5C) . Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify at the headend wherein the downstream modulator transmits a forward IP signal in response to the received reverse optical signal and insert the received identification number into reverse header information prior to transmit to the SWRD, wherein the SWRD convert the identification number into IP address taught by Logston as taught in the FTTH system of Farmer and Dolgonos; in order to communicate DHCT to headend through IP network.

Conclusion

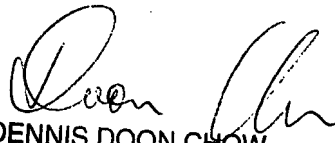
Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN LUONG whose telephone number is (571) 270-5091. The examiner can normally be reached on Mon.-Thurs., 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis Chow can be reached on (571) 272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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8/31/2007
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